

ABSTRACT OF THE DISCLOSURE

A rectifier device, based on a novel
operation principle completely different from that of
5 conventional molecular electronic devices, is made by
coupling two or more molecules or molecule arrays (11)
at certain joints. By making use of the phenomenon
that transfer of an excited state or exciton from one
molecule or molecule array to another molecule or
10 molecule array coupled thereto progresses
asymmetrically due to spatial asymmetry at the joint, a
rectifying function related to the transfer of the
excited state of exciton is obtained. Additionally, by
controlling the rectification property in addition to
15 the rectification function, an ion sensor device or a
switching device is made. A resistor device may be
inserted in the rectifier device.